

*Sub A1*

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WHAT IS CLAIMED IS:

1. A metallic seal comprising:
    - a first annular beam section having a first non-sealing surface and a first raised portion with a first annular sealing surface facing in a first axial direction to contact a first member for creating a first annular sealing dam therebetween;
    - 5 a second annular beam section having a second non-sealing surface and a first raised portion with a second annular sealing surface facing in a second axial direction, which is opposite to said first axial direction, to contact a second member for creating a second annular sealing dam therebetween;
    - 10 an annular inner surface extending between said first and second sealing surfaces to form a central passageway;
    - 15 an annular outer surface extending between said first and second sealing surfaces and spaced from said annular inner surface to form an annular column section of material extending substantially perpendicular between said first and second annular beam sections thereto; and
    - 20 one of said annular inner and outer surfaces having annular recess extending in a substantially radial direction to at least partly define an effective minimum width of said annular column section.
  - 25 2. The metallic seal according to claim 1, wherein  
said annular recess is configured to form a first diagonal brace section  
extending from said annular column section to said first beam section.
  - 30 3. The metallic seal according to claim 1, wherein  
at least a part of said first and second sealing surfaces axially overlie said annular column.
  4. The metallic seal according to claim 1, wherein  
said first and second sealing surfaces are located axially over said annular column.
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9. The metallic seal according to claim 1, wherein  
said first and second sealing surfaces are located at one of said annular inner  
and outer surfaces.

5 10. The metallic seal according to claim 1, wherein  
said first and second sealing surfaces are substantially flat to form flat sealing  
lines upon compression.

10 11. The metallic seal according to claim 6, wherein  
said flat sealing surfaces are substantially parallel to each other.

12. The metallic seal according to claim 7, wherein  
said flat sealing surfaces are substantially perpendicular to a center axis of said  
metallic seal.

15 3. The metallic seal according to claim 2, wherein  
said column section and said beam sections are integrally constructed from a  
one-piece, unitary member.

20 4. The metallic seal according to claim 2, wherein  
said effective minimum width of said column section lies within the range of  
approximately 0.008 inch to approximately 0.030 inch.

25 13. The metallic seal according to claim 1, wherein  
said column section has its axial height between said sealing surfaces at least  
as high as said effective minimum width.

30 14. The metallic seal according to claim 11, wherein  
said height of said column section is at least three times as long as minimum  
width of said column section.

~~15~~ 13. The metallic seal according to claim 1, wherein  
said first brace section extends from said column section at an angle of  
approximately 35° to approximately 55°.

5 ~~16~~ 14. The metallic seal according to claim 1, wherein  
said annular column section has an axial height lying between approximately  
0.020 inch to approximately 1.0 inch.

10 ~~5~~ 15. The metallic seal according to claim 2, wherein  
a second diagonal brace section extends from said annular column section to  
said second beam section.

15 ~~16~~ 16. The metallic seal according to claim ~~15~~, wherein  
said first and second brace sections meet approximately midway between said  
annular sealing surfaces at said annular column section.

20 ~~7~~ ~~17~~ 17. The metallic seal according to claim ~~16~~, wherein  
each of said first and second brace sections extends from said column section  
at an angle of approximately 35° to approximately 55°.

25 ~~18~~ 18. The metallic seal according to claim 1, wherein  
said annular recess is located approximately midway between said annular  
sealing surfaces.

25 ~~18~~ ~~19~~ 19. The metallic seal according to claim 1, wherein  
said annular recess is located closer to one of said first and second annular  
sealing surfaces.

30 ~~19~~ ~~20~~ 20. The metallic seal according to claim 1, wherein  
said annular recess is formed in said annular inner surface.

~~20~~ ~~21~~ 21. The metallic seal according to claim 1, wherein  
said annular recess is formed in said annular outer surface.

- ~~21~~ 22. The metallic seal according to claim 1, wherein  
said seal is formed of a corrosion resistant alloy.
- 5 ~~22~~ 23. The metallic seal according to claim 1, wherein  
said seal is formed of a material selected from the group of pure nickel,  
copper, tin, aluminum and stainless steel.